

Natural Resource Management II

Levels: Grades 10-12

Units of Credit: Year (1.0)

CIP Code: 030121

Prerequisite: Natural Resource Management I

COURSE DESCRIPTION

Students will participate in activities that stress the biological, environmental, and economic importance of our renewable natural resources. Forest and range products and their benefits are discussed. Field and laboratory experiences will be emphasized.

CORE STANDARDS, OBJECTIVES, AND INDICATORS

STANDARD

030121-01 Students will develop an understanding of the role of FFA in Agricultural Education Programs.

OBJECTIVES

030121-0101 Students will explain FFA officer duties and responsibilities.

- Students will describe the duties and responsibilities of chapter FFA officers.
- Students will explain the proper dress and characteristics of a good FFA leader.

030121-0102 Students will Plan and organize an FFA meeting.

- Students will explain how to plan a meeting and develop the order of business.
- Students will describe how to set up the meeting room.
- Students will explain the parliamentary procedure used in an FFA meeting.

STANDARD

030121-02 Students will understand the benefits of a Supervised Agricultural Experience (SAE) Program.

OBJECTIVES

030121-0201 Students will keep and use SAE records.

- Students will explain how SAE records are organized.
- Students will identify the procedures to making entries in the SAE records.
- Students will explain how to summarize and analyze the SAE records.

030121-0202 Students will make long range plans for expanding SAE Programs.

- Students will identify the factors that should be considered in expanding an SAE program.
- Students will explain how placement and ownership SAE programs may be expanded.

STANDARD**030121-03 Students will demonstrate written and verbal communication skills.****OBJECTIVES**

- 030121-0301 Students will perform tasks based on verbal instruction.
- 030121-0302 Students will participate in listening/speaking discussions with respect.
- 030121-0303 Students will demonstrate public speaking skills.
- 030121-0304 Students will read, comprehend, and interpret technical materials/publications.
- 030121-0305 Students will produce:
- Technical report/research paper.
 - Resume, letter of job application, cover letter application, cover letter and/or job application form.

STANDARD**030121-04 Students will identify and evaluate natural resources.****OBJECTIVES**

- 030121-0401 Students will select and assess a natural resource issue with regional/local impact; research its history and discuss its impact.
- 030121-0402 Students will explain the effects and/or trade-off of population growth, increased energy consumption, and growth technology and development on natural resources and the environment.

STANDARD**030121-05 Students will examine the relationship between natural resources and society, including conflict management.****OBJECTIVES**

- 030121-0501 Students will assess the individual's responsibility for stewardship of the environment.
- 030121-0502 Students will describe procedures and laws for public involvement in natural resource management.
- 030121-0503 Students will examine the principles of risk assessment and how they are applied to decision-making and adaptive management.
- 030121-0504 Students will describe the effects of technology and biotechnology on the environment.
- 030121-0505 Students will describe how peoples' values and ethics are developed, and begin to develop a personal code of environmental ethics.
- 030121-0506 Students will participate in a conflict management activity.

STANDARD**030121-06 Students will compare and contrast the various energy resources and their uses and impacts.****OBJECTIVES**

- 030121-0601 Students will distinguish between renewable and non-renewable energy sources.
- 030121-0602 Students will compare and contrast various energy resources, their reserves, use and impacts (i.e.: solar, nuclear, hydro, geothermal, wind, waves, coal, gas, etc.)
- 030121-0603 Students will demonstrate methane production.

STANDARD

030121-07 Students will demonstrate an understanding of natural resource management.

OBJECTIVES

030121-0701 Students will assess soil resources and management.

- Students will explain the importance of soil.
- Students will determine the nature of soil.
- Students will describe soil formation.
- Students will explain soil color.
- Students will describe soil texture and structure.
- Students will explain a soil profile.
- Students will determine the moisture-holding capacity of soil.
- Students will describe soil degradation.
- Students will describe soil erosion and management practices.

030121-0702 Students will demonstrate an understanding of water resources, watersheds and management.

- Students will explain the water cycle.
- Students will determine the uses of water.
- Students will identify water sources and quality standards.
- Students will conduct water quality tests.
- Students will track groundwater contamination.
- Students will explore wetlands.
- Students will determine the importance of wetlands.

030121-0703 Students will demonstrate an understanding of fisheries/wildlife resources and management.

- Students will explain life processes.
- Students will describe the food chain and natural selection.
- Students will define wildlife habitat and recognize its importance.
- Students will conserve wildlife and wildlife habitat.
- Students will create wildlife habitat.
- Students will describe the environmental requirements for fish.
- Students will manage fish diseases.
- Students will identify and classify game animals.
- Students will manage wildlife populations.
- Students will describe species endangerment.

030121-0704 Students will demonstrate an understanding of forest resources and management.

- Students will describe forest ecology.
- Students will recognize the importance of forests.
- Students will describe the growth and decline of forest trees.
- Students will measure trees.
- Students will measure timber stands.
- Students will explain the role of fire in forest management.
- Students will examine reforestation practices.
- Students will identify forest products and uses.
- Students will define urban forestry.

030121-0705 Students will demonstrate an understanding of recreation and cultural resources management.

- Students will identify outdoor recreational enterprises.
- Students will manage outdoor recreational enterprises.
- Students will manage agri-tourism enterprises.
- Students will compare various recreational uses of the region.

STANDARD

030121-08 Students will analyze waste generation, waste reduction, disposal and impacts.

OBJECTIVES

030121-0801 Students will identify characteristics of a planned wetland for taking care of waste.

030121-0802 Students will assess agriculture's impact on the environment through waste generation (i.e., animal waste, pesticide residue, fertilizer runoff, **sedimentation/erosion, and odors/dust**).

STANDARD

030121-09 Students will demonstrate an understanding of inventory and monitoring methods.

OBJECTIVES

030121-0901 Students will identify the components of a monitoring plan.

030121-0902 Students will compare and contrast the various inventory/sampling methodologies (i.e., population estimation).

030121-0903 Students will develop a basic plan for monitoring a natural resource project.

STANDARD

030121-10 Students will use computer technologies to solve environmental problems.

OBJECTIVES

030121-1001 Students use computer technologies in natural resource business and management.

STANDARD

030121-11 Students will apply basic economic principles in natural resource business and management.

OBJECTIVES

030121-1101 Students will apply basic economic principles in natural resource business and management.

030121-1102 Students will monitor monthly financial statements.

030121-1103 Students will demonstrate how to apply tax strategies and estate planning to natural resource management.

030121-1104 Students will demonstrate how economic principles contribute to land management through conservation easements and land swaps.